

111

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

THE JOHNS HOPKINS UNIVERSITY,)
a Maryland corporation, BAXTER)
HEALTHCARE CORPORATION, a)
Delaware corporation, and)
BECTON DICKINSON AND COMPANY,)
a New Jersey corporation,)
Plaintiffs,) Civil Action
v.) No. 94-105-RRM
CELLPRO, a Delaware corporation,)
Defendant.)

DECLARATION OF DR. JAMES JOSEPH VREDENBURGH

Submitted by:

POTTER ANDERSON & CORROON
William J. Marsden, Jr. (#2247)
Joanne Ceballos (#2854)
P.O. Box 951
350 Delaware Trust Building
Wilmington, Delaware 19899
(302) 984-6000
Attorneys for Plaintiffs

OF COUNSEL:

Steven J. Lee
KENYON & KENYON
One Broadway
New York, New York 10004
(212) 425-7200
Attorneys for Plaintiffs

Donald R. Ware
Peter B. Ellis
FOLEY, HOAG & ELIOT LLP
One Post Office Square
Boston, Massachusetts 02109
(617) 832-1000Attorneys for Plaintiffs

Michael Sennett
BELL, BOYD & LLOYD
Three First National Plaza
70 West Madison Street
Chicago, Illinois 60602
(312) 807-4243
Attorneys for Plaintiff
Baxter Healthcare Corporation

Dated: April 28, 1997

DECLARATION OF DR. JAMES J. VREDENBURGH

I, James J. Vredenburgh, M.D., hereby declare:

1. I am an attending physician in the Bone Marrow Transplant Program at Duke University Medical Center, and recently served as its Interim Director. I am a co-author of some 37 published scientific papers and several books in the fields of oncology, bone marrow transplantation, and related subjects. A copy of my Curriculum Vitae is attached hereto as Exhibit A.

2. Duke University Medical Center is one of the major stem cell transplant centers in the world. The Medical Center draws patients from all fifty states and from foreign countries. We have performed over 1200 breast cancer transplants, more than any other medical center in the world.

3. I am personally familiar with the capabilities of Baxter's Isolera[®] 300 Stem Cell Selection System, which we have used in treatment of breast cancer patients since mid-1996. Our use of the Isolera[®] 300 system is under an investigator-sponsored IDE for metastatic breast cancer, in which I am the Principal Investigator. We treat these patients with high dose chemotherapy, and then support their recovery by transplanting CD34+ peripheral blood stem cells. Approximately 15 patients are currently enrolled in this trial.

4. Initially, we used the Isolera[®] 300 SA device in the trial. In the fall of 1996, we obtained Baxter's newer Isolera[®] 300i device, which automates the process to shorten the processing time and make the system very easy to use. We then amended our IDE to substitute the 300i for the 300 SA, and we have used it in all subsequent procedures.

5. Our experience with the Isolera[®] 300 SA and 300i devices has been very satisfactory. We have obtained high CD34+ purities and yields, and have not observed any

toxicities associated with use of the device. Our patients have engrafted well, with no delays.

6. I also have some familiarity with CellPro's CEPRATE® SC device.

CellPro installed the device at the Medical Center a few years ago and provided training in its use. We used it in some research experiments, but not in clinical procedures. We gave no consideration to switching to the CellPro device when it received FDA approval for autologous bone marrow transplantation in December 1996, and we have no plans to use it in the future. From my perspective as a clinician, its status as an "FDA-approved" device is not relevant to my decision as to which stem cell selection device I will use, and I am very comfortable continuing to use the Baxter device in treatment protocols requiring selection of CD34+ cells.

7. In my estimation, 85% or more of stem cell transplants being performed in hospitals today use peripheral blood, as opposed to bone marrow, as the source of stem cells.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 22nd day of April, 1997.

J Vredenburgh
James J. Vredenburgh, M.D.

CURRICULUM VITAE

Name: James Joseph Vredenburgh

Social Security Number: 108-38-6502

Current Address: Home: 6200 Accorn Ridge Trail
Hillsborough, NC 27278
(919) 477-9716

Business: Division of Hematology/Oncology
Box 3981
Duke University Medical Center
Durham, North Carolina 27710
PH: (919) 684-6707
FAX: (919) 684-5177

Date of Birth: February 17, 1957

Place of Birth: Mount Kisco, New York

Current Positions: Associate Professor of Medicine
Duke University Medical Center
July 1996-present

Interim Director
Bone Marrow Transplant Program
Duke University Medical Center
July 1995-Dec. 1996

Assistant Professor of Medicine
Duke University Medical Center
July 1990-July 1996

Director, Cryopreservation Laboratory
Duke University Medical Center
July 1990-present

Attending, Bone Marrow Transplant Program
July 1990-present

Director, Clinical Laboratories
Bone Marrow Transplant Outpatient Clinic
July 1993-present

Family Status: Wife: Suzanne Vredenburgh; 3 children

Education:
B.A. Psychology
University of Virginia
May, 1979

M.D.
University of Vermont
May, 1983

Postgraduate Training: Residency in Internal Medicine
St. Francis Hospital and Medical Center
Hartford, Connecticut
July, 1983-June, 1986

Fellowship in Hematology/Oncology
Dartmouth-Hitchcock Medical Center
Hanover, New Hampshire
July, 1986-June, 1990

Professional Positions: Instructor in Medicine
Dartmouth Medical School
Hanover, New Hampshire
1986-1990

Attending Hematologist/Oncologist
Dartmouth Medical School
Hanover, New Hampshire
1990

Associate Professor of Medicine
Duke University Medical Center
Durham, North Carolina
1990-present

Assistant Professor of Medicine
Duke University Medical Center

Durham, North Carolina
July 1990-1998

Director, Cryopreservation Laboratory
Duke University Medical Center
Durham, North Carolina
July 1990-present

Director, Hillendale Clinical Laboratory
Duke University Medical Center
Durham, North Carolina
May 1992-present

Attending, Bone Marrow Transplantation Program
July 1990-present

**Board Certification
and Licenses:**

Board Certified in Internal Medicine, 6/88

Board Certified in Hematology, 11/89

Board Certified in Medical Oncology, 11/89

Licensed in the states of Connecticut, New
Hampshire, North Carolina, and Vermont

**Societies and
Professional Affiliations:**

American Society of Clinical Oncology (ASCO), 1992

American Society of Hematology (ASH), 1992

American Society of Blood and Marrow Transplantation,
1992

International Society for Hematotherapy and Graft
Engineering, 1993

Awards and Honors:

Frank N. Willard, M.D. Award
Most Outstanding and Sensitive Physician
St. Francis Hospital and Medical Center
May, 1986

Tiffany Blake Fellow
Hitchcock Clinic
July, 1988

Dartmouth-Hitchcock Medical Center
Most Compassionate Physician
June, 1988

American Cancer Society Institutional Grant
November, 1988-October, 1989

Committees and Boards: Member, Cancer Protocol Review Committee
Comprehensive Cancer Center
Duke University Medical Center
September, 1990-present

Member, Standards and Accreditation Committee
Internal Society of Hematotherapy and Graft Engineering
1993-present

Major Research Interests:

1. Detection of submicroscopic metastases in the marrow and peripheral blood.
2. Bone marrow purging with monoclonal antibodies.
3. High-dose chemotherapy and hematopoietic support for breast and ovarian cancer.

Teaching Experience:
Instructor in Medicine
Dartmouth Medical School
Hanover, New Hampshire
1988-1990

Assistant Professor of Medicine
Duke University Medical Center
Durham, North Carolina
1990-1993

Associate Professor of Medicine
Duke University Medical Center
Durham, North Carolina
1993-present

Principal Clinical and Hospital Service

Responsibilities: Attending Hematologist
Dartmouth Medical School
Hanover, New Hampshire
1980

Attending Hematologist/Oncologist
Bone Marrow Transplant Program
Duke University Medical Center
Durham, North Carolina
July, 1990-present

Major Administrative

Responsibilities: Interim Director
Bone Marrow Transplant Program
Duke University Medical Center
Durham, North Carolina
July 1995-Dec. 1996

**Director, Cryopreservation Laboratory
Bone Marrow Transplant Program
Duke University Medical Center
Durham, North Carolina
July, 1990-present**

**Director, Hillandale Clinical Laboratory
Duke University Medical Center
Durham, North Carolina
May, 1992-present**

PUBLICATIONS

1. Ramsey A, Vredenburgh J: Recognition of alcoholism among patients with psychiatric problems in a family practice clinic. J Family Practice 17:829, 1983.
2. Vredenburgh JJ, McIntyre OR, Cornwell CG III, Ball ED, Cornell JC, Mills LE, O'Donnell JF: Mitoxantrone in the treatment of relapsed or refractory acute non-lymphocytic leukemia. Med & Ped Oncol 18:187-189, 1988.
3. Ball ED, Vredenburgh J, Mills LE, Cornwell GC, Schwarz L, Howell AL, Troy K: Autologous bone marrow transplantation for acute myelogenous leukemia following *in vitro* treatment with neuraminidase and monoclonal antibodies: A case report. Bone Marrow Transplantation 5:277-280, 1990.
4. Vredenburgh JJ, Ball ED: Elimination of small cell carcinoma of the lung from human bone marrow by monoclonal antibodies and immunomagnetic beads. Cancer Res 50:7216-7220, 1990.
5. Vredenburgh JJ, Simpson W, Memoli VA, Ball ED: Reactivity of anti-CD15 monoclonal antibody PM-81 with breast cancer and elimination of breast cancer cells from human bone marrow by PM-81 and immunomagnetic beads. Cancer Res 51:2451-2455, 1991.
6. Wurster-Hill D, Vredenburgh JJ, Mills LE, Davis BH, Ball ED: Isodicentric chromosome 18q as sole abnormality in a histologically normal bone marrow from a patient with diffuse large-cell non-Hodgkin's lymphoma. Cancer Genet & Cytogenet 54:233-237, 1991.
7. Ball ED, Powers FJ, Vredenburgh JJ, Heath CA, Converse AO: Purging of small cell lung cancer cells from bone marrow using immunomagnetic beads and a flow through device. Bone Marrow Transplantation 8:35-40, 1992.
8. Best RC Jr, Boyer CM, Berchuck A, Xu FJ, Wu S, Lidor Y, Maier LA, Chews JR, Ross M, Vredenburgh JJ, Shpall EJ, Peters WP: New strategies for the management of ovarian and breast cancer based on biology and pharmacology. Cancer Chemotherapy: Challenges for the Future 7:3-20, 1992.
9. Marks LB, Halperin EC, Prosnitz LR, Ross M, Vredenburgh JJ, Rosner GL, Peters WP, and CALGB: Post-mastectomy radiotherapy following adjuvant chemotherapy and autologous bone marrow transplantation for breast cancer patients with ≥ 10 axillary lymph nodes. Int J Radiation Oncology Biol Phys 23:1021-1026, 1992.

10. Peters WP, Drago S, Tepperberg M, Vredenburgh JJ: Collection, cryopreservation and use of peripheral blood progenitor cells primed with colony stimulating factor. In: Marrow Transplantation: Practical and Technical Aspects of Stem Cell Reconstitution. Eds: Sacher RA and AuBuchon JP. Arlington, VA: American Association of Blood Banks, pp. 51-67, 1992.
11. Peters WP, Kurtzberg J, Roemer G, Ross M, Vredenburgh J, Meisenberg B, Gilbert C: Comparative effects of G-CSF and GM-CSF on priming peripheral blood progenitor cells for use with autologous bone marrow after high-dose chemotherapy. Blood 81:7, 1709-1719, 1993.
12. Peters WP, Ross M, Vredenburgh JJ, Meisenberg B, Marks LB, Winer E, Kurtzberg J, Bast RC Jr, Jones R, Shpall E, Wu K, Roemer G, Gilbert C, Mathias B, Coniglio D, Petros W, Henderson IC, Norton L, Weiss RB, Budman D, Hurd D: High-dose chemotherapy and autologous bone marrow support as consolidation after standard-dose adjuvant therapy for high-risk primary breast cancer. J Clinical Oncology 11:1132-1143, 1993.
13. Peters WP, Ross M, Vredenburgh J, Hussein A, Meisenberg B, Gilbert C, Petros W, Kurtzberg J: Role of cytokines in autologous bone marrow transplantation. Hematology/Oncology Clinics of North America 7:737-747, 1993.
14. Meisenberg B, Ross M, Vredenburgh JJ, Jones R, Shpall EJ, Seigler HF, Coniglio DM, Wu K, Peters WP: Randomized trial of high-dose chemotherapy with autologous bone marrow support as adjuvant therapy for high-risk, multi-node positive malignant melanoma. J Nat Cancer Inst 85:(13), July 7, 1993.
15. Gilbert C, Meisenberg B, Vredenburgh J., Ross M, Hussein A, Perfect J, Peters WP: Sequential prophylactic Ciprofloxacin and Rifampin and empiric once daily Vancomycin and aminoglycoside for neutropenic fever after high-dose chemotherapy and autologous bone marrow support. J Clinical Oncology 12:1006, 1994.
16. Thei MC, Ciaccia D, Vredenburgh JJ, Peters W, Corey GR: Clostridium septicum abscess in hepatic metastases: Successful medical management. Bone Marrow Transplant 13(4):495-8, 1994.
17. Marks L, Roemer GL, Prosnitz LR, Ross M, Vredenburgh JJ, Peters WP: The impact of conventional plus high dose chemotherapy with autologous bone marrow transplantation on hematologic toxicity during subsequent local-regional radiotherapy for breast cancer. Cancer 74(11):2964-71, 1994.

18. Meisenberg B, Lassiter M, Hussein A, Ross M, Vredenburgh JJ, Peters WP: Prevention of hemorrhagic cystitis after high-dose alkylating agent chemotherapy and autologous bone marrow support. Bone Marrow Transplant 14(2):287-91, 1994.
19. Muggia R, Vredenburgh J, Paulson EK, Ross M, Meisenberg B, Hussein A, Peters WP: A radiologic syndrome after high dose chemotherapy and autologous bone marrow transplantation, with clinical and pathologic features of systemic candidiasis. Cancer 74(4):1380-1388, 1994.
20. Ghali AA, Silva O, Vredenburgh JJ, Bast RC Jr: Advances in the detection of marrow micrometastases in breast cancer. Cancer Research, Therapy and Control 4:43-47, 1994.
21. Peters WP, Ross M, Vredenburgh J, Hussein A, Rubin P, Dukelow K, Cavanaugh C, Beauvais R, Kasprzak S: The use of intensive clinic support to permit outpatient autologous bone marrow transplantation for breast cancer. Seminars in Oncology 21(4)(Suppl 7):25-31, 1994.
22. Young ST, Paulson EK, Washington K, Gulliver DJ, Vredenburgh JJ, Baker ME: CT of the liver in patients with metastatic breast carcinoma treated by chemotherapy: Findings simulating cirrhosis. AJR 163:1385-1388, 1994.
23. Vredenburgh JJ, Peters WP: Commentary on the article, "Bone marrow micrometastases in breast cancer", written by M Osborne and P Rosen. Oncology 8:31, 1994.
24. Hussein AM, Ross M, Vredenburgh J, Meisenberg B, Hara V, Gilbert C, Petros WP, Coniglio D, Kurtzberg J, Rubin P, Peters WP: Effects of granulocyte-macrophage colony stimulating factor produced in Chinese hamster ovary cells (regranulostim), *Escherichia coli* (moltgramostim) and yeast (sargramostim) on priming peripheral blood progenitor cells for use with autologous bone marrow after high-dose chemotherapy. European J Haematol, 54:281-287, 1995.
25. Vredenburgh JJ, Peters WP, Rosner G, De Sombre K, Johnstone WW, Kamel A, Wu K, Bast RC Jr: Detection of tumor cells in the bone marrow of stage IV breast cancer patients receiving high dose chemotherapy: The role of induction chemotherapy. Bone Marrow Transplantation, 16: 815-821, 1995.
26. Hussein AM, Petros WP, Ross M, Vredenburgh JJ, Affronti ML, Jones RB, Shpall EJ, Rubin P, Elkordy M, Gilbert C, Gupton C, Egorin MJ, Soper J, Borchuck A, Clarke-Pearson D, Berry DA, Peters WP: A phase I/II study of high-dose cyclophosphamide, cisplatin, and thiotepa followed by autologous bone

marrow and granulocyte colony-stimulating factor-primed peripheral blood progenitor cells in patients with advanced malignancies. Cancer Chemotherapy and Pharmacology, 37: 561-568, 1996.

27. Ingram SS, Samulski T, Dodge R, Prosnitz LR, Peters WP, Vredenburgh JJ. The Effects of Hyperthermia in Bone Marrow Purging of Breast Cancer. Internal Journal of Hyperthermia, 12 (1) 21-29, 1996.
28. Crews J, Vredenburgh JJ, Hussain A, Rubin P, Elkordy M, Ross M, Gockerman J, Cirrincione C, Bigner S, Mills L, Peters WP: Secondary Myelodysplastic Syndrome and Acute Leukemia in Patients Following Autologous Bone Marrow Transplant. Submitted to Journal of Clinical Oncology, 1995.
29. Cohen A, Tepperberg M, Waters-Pick B, Coniglio D, Perfect J, Peters WP, Gilbert C, Morgan C, Vredenburgh JJ. The Significance of Microbial Cultures of the Hematopoietic Support for Patients Receiving High-Dose Chemotherapy. Journal of Hematotherapy, 5:289-294, 1996.
30. Rubin P, Hulette C, Khawly JMI, Elkordy M, Hussain A, Vredenburgh JJ. Ocular Toxicity Following High Dose Chemotherapy and Autologous Bone Marrow Transplantation: Case Report and Pathological Correlation. Bone Marrow Transplantation, 18:253-256, 1996.
31. Vredenburgh JJ, Silva O, Tyler CL, DeSombre K, Cook M, Layfield L, Peters WP, Beat RC Jr. A comparison of immunohistochemistry, two-color immunofluorescence and flow cytometry with cell sorting for the detection of micrometastatic breast cancer in the bone marrow. Journal of Hematotherapy, 5:57-62, 1996.
32. Petros WP, Rosner G, Rabinowicz J, Gilbert C, Coniglio D, Vredenburgh JJ, Ross M, Peters WP. The Pharmacologic Effects of Recombinant, Human Colony-Stimulating Factors and Their Modulation by Theophylline. Pharmacotherapy, 16;(5):742-748, 1996.
33. Carter L, Petros WP, Rosner G, Gilbert C, Moore S, Affronti ML, Hoke J, Hussain AM, Ross M, Rubin P, Vredenburgh JJ, Peters WP: Evaluation of GM-CSF Mouthwash Prevention of Chemotherapy-Induced Mucositis: A Randomized, Double-Blind, Dose Ranging Study. Cytokine 7 (5), 471-477, 1995.

34. Fisher DC, Sherrill, G, Bradley, Hussein A, Rubin P, Vredenburgh JJ, Eikordy M, Ross M, Peters WP. Thrombotic microangiopathy as a complication of high-dose chemotherapy for breast cancer. *Bone Marrow Transplantation*, 18, 193-198, 1996.
35. Vredenburgh JJ, Silva O, Broadwater G, Berry D, DeSombre K, Tyer C, Peters WP, Baet RC Jr. The Significance of Tumor Contamination in the Bone Marrow from High Risk Primary Breast Cancer Patients Treated with High Dose Chemotherapy and Hematopoietic Support. Submitted to *Journal of Clinical Oncology*.
36. Eikordy M, Crump M, Vredenburgh J, Petros WP, Hussein A, Rubin P, Ross M, Gilbert C, Modlin C, Meisenberg B, Coniglio D, Rabinowitz J, Laughlin M, Kurtzberg J, Peters WP. A phase I trial of recombinant human interleukin-1-beta(OCT-43) following high-dose chemotherapy and autologous bone marrow transplantation. *Bone Marrow Transplantation*, 19, 315-322, 1997.
37. Tyer CL, Vredenburgh JJ, Heimer M, Peters WP, Baet RC Jr. Breast cancer cells are effectively purged from peripheral blood progenitor cells using an immunomagnetic technique. *Clin Cancer Res*, 2:81-86, 1996.

Books

1. Vredenburgh JJ, Ball ED: Lymphokines and lung cancer. In, Lung Cancer Differentiation, Bemel S, Baylin S, eds. New York: Marcel Dekker, Inc., 1992.
2. Vredenburgh JJ. Photographic Case Studies in Surgical Oncology. Diagnostic Tests for Practitioners eds. Clinical Communications, 1993
3. Vredenburgh JJ. Photographic Case Studies in Malignant Disease. Diagnostic Tests for the Practitioner. eds. Clinical Communications, 1993.
4. Serely M, Vredenburgh J, Zwas FR. Immunocompromised Patients. A Case Study Approach. eds. Clinical Communications, vol. 1, 1995.
5. Serely M, Skowron G, Vredenburgh JJ, Zwas F. Immunocompromised Patients: A Case Study Approach. eds. Clinical Communications, vol. 2, 1996.

Abstracts:

1. Vredenburgh J, McIntyre OR, Cornwell GG II, Ball ED, Cornell CJ, Mills LE, O'Donnell JF. Mitoxantrone in the treatment of relapsed and refractory acute non-lymphocytic leukemia. Leukemia 1:267, 1987.
2. Vredenburgh JJ and Ball ED: Monoclonal antibodies and immunomagnetic beads eliminate small cell carcinoma of the lung from bone marrow. Proceedings of the American Society of Clinical Oncology 8:224 (No. 871), 1989.
3. Vredenburgh JJ: The detection of a low percentage of small cell carcinoma of the lung or breast cancer cells in the bone marrow by two-color flow cytometry. Submitted for presentation at the New England Cancer Society Meeting, 11/89.
4. Ball ED, Vredenburgh JJ, Crabtree GW: Monoclonal antibodies detect and eliminate breast cancer from bone marrow. UCLA Bone Marrow Transplant Symposia. J Cell Biochem 1990.
5. Powers F, Heath CA, Ball ED, Vredenburgh JJ, Converse AO. Separation of tumor cells from bone marrow using immunomagnetic beads. Presented at the Cell Separation Symposium at the ACS Meeting, Boston, Massachusetts, 4/90.
6. Simpson WA, Vredenburgh JJ, Ball ED, Memoli VA: PM-81 reactivity with normal, fibrocytic and malignant breast tissues. Presented at the United States and Canadian Academy of Pathology Meeting, Boston, Massachusetts, 1990.
7. Vredenburgh JJ, Davis B, Ball ED: The detection of low percentages of small cell carcinoma of the lung or breast cancer cells in the bone marrow by two-color flow cytometry. Proceedings of the American Society of Clinical Oncology 9:7 (No. 23), 1990.
8. Vredenburgh JJ, Ross M, Dukelow K, Johnson S, Shpall EJ, Jones RB, Best RC, Peters WP. Intravenous gamma globulin for refractory thrombocytopenia following high-dose alkylating chemotherapy and autologous bone marrow transplantation. Blood 76:410a, 1990.
9. Peterson J, Kirkpatrick G, Ross M, Vredenburgh J, Peters WP, Kurtzberg J: Growth factor primed peripheral blood progenitor cells (PBPC) are enriched for hematopoietic progenitor cells (HPC). Proceedings of the American Society of Clinical Oncology 10:78, 1991.

10. Winer EP, Gold DT, Lees J, Affronti ML, Westlund R, Ross M, Vredenburgh J, Jones R, Shpall E, Trump DL, Peters WP, Cohen HJ: Quality of life (QL) following high dose chemotherapy with autologous bone marrow support (HDC) in patients with metastatic breast cancer. Proceedings of the American Society of Clinical Oncology 10:62, 1991.
11. Peterson J, Kirkpatrick G, Ross M, Vredenburgh J, Peters WP, Kurtzberg J: Growth factor-primed peripheral blood progenitor cells (PBPC) are enriched for hematopoietic progenitor cells (HPC). Proceedings of the American Society of Clinical Oncology 10:78a, 1991.
12. Vredenburgh JJ, Ross A, Siegal MD, Ring D, Ross M, Peters WP: Micrometastatic bone marrow involvement in patients with breast cancer and 10 or more positive nodes. Breast Cancer Research and Treatment 19:171 (No. 59), 1991.
13. Vredenburgh J, Ross M, Kurtzberg J, Coniglio D, Dukelow K, Gilbert C, Peters W: Phase I trial of interleukin-1-beta (IL-1-beta) following high-dose chemotherapy and autologous bone marrow transplantation (ABMT). Blood 78:6a, 1991.
14. Peters WP, Hussein AM, Kurtzberg J, Ross M, Vredenburgh J, Gilbert C, Coniglio D, Dukelow K, Oette D: Use of recombinant human interleukin-3 (IL-3) in patients (pts) with metastatic breast cancer receiving high-dose chemotherapy (HDC) and chemo-immunologically purged autologous bone marrow transplantation (P-ABMT). Blood 78:162a, 1991.
15. Meisenberg B, Ross M, Jones R, Vredenburgh J, Seigier H, Peters WP: Adjuvant high-dose combination alkylating agent chemotherapy (HDCAA) with autologous bone marrow support (ABMS) in multi-node positive melanoma. Proceedings of the American Society of Clinical Oncology 11:346a, 1992.
16. Vredenburgh J, Shpall EJ, Ross M, Meisenberg B, Baetz R, Tyar C, Tepperberg M, Eggleston S, Peters WP: Immunopharmacologic bone marrow purging and high-dose chemotherapy with autologous bone marrow support (ABMS) for patients with metastatic breast cancer. Proceedings of the American Society of Clinical Oncology 11:58, 1992.
17. Peters WP, Ross M, Vredenburgh J, Meisenberg B, Rosner G, Marks L, Mathias B, Henderson C, Hurd D, Budman D, Norton L, Weiss RB: High-dose alkylating agents and autologous bone marrow support (ABMS) for stage II/III breast cancer involving 10 or more axillary lymph nodes (Duke and CALGB 8782). Proceedings of the American Society of Clinical Oncology 11:68, 1992.

18. Vredenburgh JJ, Ross M, Meisenberg B, Hussein A, Kurtzberg J, Gilbert C, Petros W, Peters WP: A short course of G-CSF for priming of peripheral blood progenitor cells (PBPC). Blood 80:291a, 1992.
19. Crump M, Ross M, Vredenburgh J, Meisenberg B, Dukelow K, Peters WP: Early toxicity after high-dose therapy and autologous bone marrow transplantation (ABMT) for breast cancer: Implications for outpatient management. American Society of Hematology 34th Annual Meeting, Blood 80:70a, 1992.
20. Meisenberg B, Affronti M, Ross M, Vredenburgh J, Hussein A, Kay J, Peters WP: Recombinant human macrophage colony-stimulating factor (rhM-CSF) after high-dose chemotherapy (HDC) with autologous bone marrow support (ABMS). Blood 80:417a, 1992.
21. Gupta C, Rabinowitz J, Petros W, Stuart A, Vredenburgh J, Peters WP: Interleukin-3 therapy suppresses endogenous cytokine concentrations following high-dose chemotherapy and autologous bone marrow transplantation (ABMT). Blood 80:85a, 1992.
22. Hussein A, Vredenburgh JJ, Meisenberg BR, Ross M, Petros WP, Peters WP: Protection against chemotherapy-induced alopecia by minoxidil in the newborn rat animal model. American Society of Hematology 34th Annual Meeting. Blood 80:450a, 1992.
23. Vredenburgh J, Ross M, Meisenberg B, East RC Jr, Gilbert C, Lawrence J, Moore S, Affronti M, Coniglio D, Mathias B, Oette D, Peters WP: Use of interleukin-3 (IL-3) and/or GM-CSF in patients with metastatic breast cancer receiving high-dose chemotherapy (HDC) and immunopharmacologically purged (IMP) autologous bone marrow support (P-ABMS). Twenty-Fourth Congress of the International Society of Haematology 24:1, 1992.
24. Peters WP, Ross M, Vredenburgh J, Winer E, Rosner G, Meisenberg B, Hussein A: High-dose adjuvant chemotherapy with autologous bone marrow support for high-risk primary breast cancer. International Conference on the Adjuvant Therapy of Cancer, March 10-13, 1993.
25. Ross AA, Cooper SW, Lazarus HM, Peters WP, Vredenburgh JJ, Moore TJ, Ciobanu N, Tallman MS, Kennedy MJ, Davideon N, Sweet DS, Di Persio JF, Klumpp TS, Jansen J, Akard L, Copelan E, Kahn DG, Winer NE: Incidence of tumor cell contamination in peripheral blood stem cell (PBSC) collections from breast cancer patients. Proceedings of the American Society of Clinical Oncology 12:69, 1993.

26. Vredenburgh J, Ross M, Meisenberg B, Mudad R, Paulson E, Hussein A, Peters WP: Hepatic, splenic and renal candidiasis following high-dose chemotherapy and autologous bone marrow support. Proceedings of the American Society of Clinical Oncology 12:456, 1993.
27. Cruaga M, Ross M, Vredenburgh J, Shpall E, Jones R, Meisenberg B, Peters WP: Phase I/II evaluation of high-dose thiotapec, cisplatin and cyclophosphamide with autologous stem cell rescue for patients with refractory solid tumors. Proceedings of the American Society of Clinical Oncology 12:131, 1993.
28. Vredenburgh J, Baet RC Jr, De Sombre K, Johnston W, Peters WP: Detection of tumor cells in the bone marrow or peripheral blood in breast cancer patients with 10 or more positive nodes. Proceedings of the American Association for Cancer Research 34:1130, 1993.
29. Tyer C, Vredenburgh J, Baet RC Jr, Peters WP: Two-color immuno-fluorescence improves the detection of tumor cells in the bone marrow. Fourth International Symposium on Purging and Processing 4:81, 1993.
30. Vredenburgh J, Ross M, Meisenberg B, Hussein A, Baet RC Jr, Shpall EJ, Tyer C, Heimer M, Tepperberg M, Afronti ML, Moore S, Peters WP: A phase I trial of high-dose chemotherapy and immunopharmacologically purged autologous bone marrow support for patients with metastatic breast cancer. Fourth International Symposium on Purging and Processing 4:23, 1993.
31. Tyer CL, Vredenburgh JJ, Heimer M, Baet RC Jr, Peters WP: Breast cancer cells are effectively purged from peripheral blood progenitor cells using an immunomagnetic technique. Fourth International Symposium on Purging and Processing 4:11, 1993.
32. Vredenburgh JJ, Waters-Pick B, Kurtzberg J, Drago S, Ross M, Hussein A, Peters WP: A single 6-hour (HR) steady state leukapheresis is sufficient for collection of peripheral blood progenitor cells (PBPC) after G-CSF. Blood 82:1381(a), 1993.
33. Hussein A, Ross M, Vredenburgh JJ, Meisenberg B, Gilbert C, Petros WP, Coniglio D, Kurtzberg J, Peters WP: Effects of granulocyte-macrophage colony stimulating factor (GM-CSF), Escherichia coli (E. Coli-GM) or yeast (yeast GM) on priming peripheral blood progenitor cells for use with autologous bone marrow after high-dose chemotherapy. Blood 82:1156(a), 1993.

34. Drago S, Vredenburgh J, Waters-Pick B, Kurtzberg J, Ross M, Meisenberg B, Hussein A, Peters WP: Increased whole blood flow or collection rates increase the yield of G-CSF primed peripheral blood progenitor cells. American Society for Apheresis 14:52, 1993.

35. Vredenburgh J, Ross M, Hussein A, Rubin P, Coniglio D, Matters L, Dukelow K, Gilbert C, Petros W, Peters WP: A phase I trial of high-dose ifosfamide(I), carboplatin(C), and melphalan(M) (ICaM) with hematopoietic support (HS) for advanced metastatic breast cancer (MBC). Proceedings of ASCO 13:96, 1994.

36. Elkordy M, Matters L, Coniglio D, Petros W, Vredenburgh J, Hussein A, Meisenberg B, Rubin P, Ross M, Peters WP: The effect of continuous infusion 5-FU (C-F) with or without Taxol (T) as induction therapy in Stage IV breast carcinoma (BC). Proceedings of ASCO 13:95, 1994.

37. Rubin P, Jaffe GJ, Hussein A, Vredenburgh J, Ross M, Peters WP: Ocular toxicity following high-dose chemotherapy and autologous bone marrow transplant. Proceedings of ASCO 13:148, 1994.

38. Vredenburgh J, Waters-Pick B, Drago S, Afronti ML, Kurtzberg J, Ross M, Hussein A, Rubin P, Elkordy M, Meisenberg B, Peters WP: G-CSF-primed peripheral blood progenitor cells (PBPCs) collected in the steady state are superior to G-CSF-primed PBPCs collected on the rebound from chemotherapy. Blood 84:415(s), 1994.

39. Peters WP, Berry D, Vredenburgh JJ, Hussein A, Rubin P, Elkordy M, Ross M, Henderson IC, Budman D, Norton L, Weiss R, Hurd D: Five year follow-up of high-dose combination alkylating agents with ABMT as consolidation after standard-dose CAF for primary breast cancer involving ≥ 10 axillary lymph nodes (Duke/CALGB 8782). Accepted for presentation. Proceedings of ASCO 14: 1995.

40. Vredenburgh J, Silva O, de Sombre K, Franklin W, Ciminoone C, Berry D, Peters WP, Bast RC Jr: The significance of bone marrow micrometastases for patients (PTS) with breast cancer and $\geq 10+$ lymph nodes treated with high-dose chemotherapy and hematopoietic support. Accepted for presentation. Proceedings of ASCO 14: 1995.

41. Crews JR, Vredenburgh J, Bigner S, Hussein A, Rubin P, Elkordy M, Ross M, Mills L, Penley C, Geckerman J, Peters WP: Incidence of myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML) after high-dose chemotherapy (HDC) and autologous bone marrow transplant (ABMT). Accepted for presentation. Proceedings of ASCO 14: 1995.

42. Fisher D, Sherrill GB, Hussein AM, Rubin P, Vredenburgh JJ, Ross M, Elkordy MA, Peters WP: Thrombotic angiopathy (TMA) as a complication of high-dose chemotherapy (HDC) for breast cancer. Accepted for presentation. Proceedings of ASCO 14: 1996.

43. Vredenburgh J, Peters WP, Hussein A, Ross M, Rubin P, Elkordy M, Coniglio D, Matters L, Dukelow K, Gilbert C, Peters WP: A phase I trial of high-dose ifosfamide (I), carboplatin (Ca), and melphalan(M) (ICaM) with hematopoietic support (HS) for advanced metastatic breast cancer (MBC). Accepted for presentation. Proceedings of ASCO 14: 1996.

44. Hussein A, Peters W, Ross M, Vredenburgh J, Affronti M, Jones R, Shpall E, Rubin P, Elkordy M, Gilbert C, Soper J, Borchuck A, Clarke-Pearson D, Peters WP: Phase I/II study of high-dose cyclophosphamide (CPA), Cisplatin (cDDP), and thiotepa (TT) with autologous bone marrow support (ABMS) and granulocyte colony-stimulating factor (G-CSF)-primed peripheral blood progenitor cells (PBPCs) in advanced cancer patients. Proceedings of the ASCO 14: 967, 1995.

45. Rubin P, Peters W, Vredenburgh J, Hussein A, Elkordy M, Ross M, Peters WP: Cyclophosphamide-induced cardiomyopathy following high-dose chemotherapy. Proceedings of ASCO 14: 968, 1995.

46. Tyer C, DeSombre K, Vredenburgh JJ, Peters WP, Baet RC Jr: Two-color immunofluorescence tumor cell detection in immunomagnetically purged stage IV breast samples. Accepted for presentation, ISHAGE, 1995.

47. DeSombre K, Tyer CL, Silva O, Cook M, Vredenburgh JJ, Peters WP, Baet RC Jr: A comparison of immunohistochemistry, two-color immunofluorescence and flow cytometry with cell sorting for the detection of micrometastatic breast cancer in the bone marrow. Accepted for poster and slide presentation, ISHAGE, 1995.

48. Helmer M, Tyer C, Vredenburgh JJ, Peters WP, Baet RC Jr: The effect of immunomagnetically purged peripheral blood progenitor cells on bone marrow reconstitution. Accepted for presentation ISHAGE, 1995.

49. Hussein A, Plumer M, Vredenburgh JJ, Smith N, Fishman B, Matters L, Affronti M, Coniglio D, Elkordy M, Rubin P, Ross M, Gilbert C, Peters WP, Peters WP: High Dose Chemotherapy (HDC) with Cyclophosphamide (C), Cisplatin (P), and BCNU (B) (CPB) and Autologous Bone Marrow (ABM) and Peripheral Blood Progenitor Cells (PBPCs) for Stage IV/III Breast Cancer Involving 4-8 Axillary Lymph Nodes. Submitted to ASCO, 1996.

50. Vredenburgh J, Hussein A, Rubin P, Elkordy M, Tyer C, Helmer M. High Dose Chemotherapy and Immunomagnetically Purged Peripheral Blood Progenitor Cells and Bone Marrow for Metastatic Breast Carcinoma. Submitted to ASCO 1996.
51. Gilbert C, Kondisko HA, Petros WP, Hussein AM, Elkordy M, Rubin P, Peters WP, Vredenburgh JJ. Elevated Liver Function Tests (LFTs) Associated with Filgrastim (G-CSF) Priming and Leukapheresis of Peripheral Blood Progenitor Cells. Submitted to ASCO, 1996.
52. Rubin P, Reiner E, Vredenburgh JJ, Hussein AM, Elkordy M, Gilbert C, Petros WP, Peters WP. Platelet Alloimmunization (ALM) During High Dose Chemotherapy (HDC). Submitted to ASCO, 1996.
53. Petros WP, Rubin P, Gilbert C, Smith C, Fehdrau R, Soucie M, Elkordy M, Hussein A, Peter WP, Vredenburgh JJ. Removal of Excessive Plasma Carboplatin via continuous Veno-Venous Hemofiltration or Hemodialysis Following High Dose Chemotherapy. Submitted to ASCO, 1996.
54. Petros W, Vredenburgh JJ, Hussein A, Rubin P, Elkordy M, Gilbert C, Colvin OM. Retrospective Analysis and Prospective Strategies for Individualized Delivery of High-Dose Chemotherapy. Submitted to NC Cancer Research Symposium, 1996.
55. Hussein, A, Plumer M, Vredenburgh, Smith N, Fishman B, Matters L, Aifroni ML, Coniglio D, Elkordy M, Rubin P, Ross M, Gilbert C, Petros WP, Peters WP, Colvin OM. High-Dose Chemotherapy (HDC) with Cyclophosphamide (C), Cisplatin (P), and BCNU (B) (CPB) and Autologous Bone Marrow (ABM) and Peripheral Blood Progenitor Cells (PBPCs) for Stage III/IV Breast Cancer Involving 4-6 Axillary Lymph Nodes. Submitted to NC Cancer Research Symposium, 1996.
56. Hussein A, Vredenburgh J, Elkordy M, Rubin P, Fisher D, Canales R, Petros W, Gilbert C, Perez N, Dykstra K, Lewy J, Kaya J, Peter WP. Randomized, Placebo-Controlled Study of Recombinant Human Interleukin Eleven (Neumega™ mIL-11 Growth Factor) in Patients with Breast Cancer following high-dose chemotherapy with autologous Hematopoietic Progenitor Cells (AHPC) Support. Submitted for Presentation during the 25th Annual Meeting of the International Society for Experimental Hematology, New York, NY, 1996.

57. Hussein A, Vredenburgh JJ, Elkordy M, Gilbert C, Petros WP. Protein A Apheresis Therapy for Transplant Induced Thrombotic Microangiopathy. Submitted to ASH, 1996.
58. Vredenburgh JJ, Rubin P, Elkordy M, Crews J, Peters WP, Legrand S, DeFusco P. Secondary Myelodysplasia (MDS)/ Acute Leukemia (AL) after High Dose Chemotherapy for Metastatic Breast Cancer. Submitted to ASH, 1996.
59. Bearman SI, Vredenburgh JJ, Cagnoni PJ, Ross M, Shpall EJ, Jones RB. High Dose Chemotherapy with Autologous Hematopoietic Progenitor Cell Support for Patients with Breast Cancer who Failed Previous Stem Cell-Supported Therapy. Submitted to ASCO 1997.
60. Petros WP, Broadwater G, Berry D, Jones RB, Vredenburgh JJ, Gilbert CJ, Colvin OM, Peters WP. Correlation of High Dose Cyclophosphamide (CPA), Cisplatin (CDDP), and Carmustine (BCNU) Pharmacokinetics (PK) to Response and Toxicity in Patient with Primary Breast Cancer. Submitted to ASCO 1997.
61. Vredenburgh J, Tyer C, Broadwater G, Berry D, Desombre K, Silva O. The Incidence and Significance of Tumor Cell Contamination of the Hematopoietic Support from Patients with Breast Cancer Treated with High Dose Chemotherapy. Submitted to ASCO 1997.
62. Lundell SI, Tyer C, Desombre K, Vredenburgh JJ, Smith AK. Ex-Vivo Perfusion Culture Expansion of Tumor Positive Bone Marrow from Breast Cancer Patients Results in Passive Purging During the Culture Period. Submitted to ISEH, 1997.
63. Jamieson TA, Carter DL, Pronitz LR, Vredenburgh JJ, Marks LB. Predictors for Pneumonitis during local-regional radiotherapy in patients with advanced breast cancer previously treated with high dose chemotherapy and bone marrow transplant. Submitted to Astro, 1997.

CERTIFICATE OF SERVICE

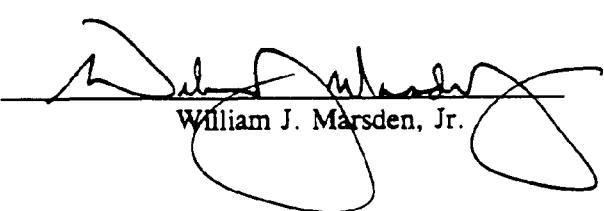
I, William J. Marsden, Jr., hereby certify that on this 28th day of April, 1997, copies of the within document were caused to be served on the attorneys of record at the following addresses as indicated:

VIA HAND DELIVERY

Gerard M. O'Rourke, Esquire
Connolly, Bove, Lodge & Hutz
1220 Market Street
P.O. Box 2207
Wilmington, Delaware 19801

VIA FEDERAL EXPRESS DELIVERY

Coe A. Bloomberg, Esquire
Lyon & Lyon
633 West Fifth Street
47th Floor
Los Angeles, CA 90071



William J. Marsden, Jr.